REMARKS

The Examiner, Mr. Kackar, is thanked for the courtesy extended applicants attorney during the interview of April 25, 2006 during which time amendments to the claims were proposed and differences between the claimed invention and the cited art were discussed. Although the Examiner indicated that prior to filing an amendment, he would review the proposed amendment and provide further comments, on May 10, 2006, the Examiner advised that he did not have sufficient time and that amendment should be filed as discussed. Accordingly, submitted herewith is the amendment as discussed on April 25, 2006.

By the present amendment, independent claims 8 and 9 have been amended to more particularly set forth the steps effected by the arithmetic unit and the determination unit, noting that independent claims 8 and 9 have also been amended to recite plasma processing in a batch of the substrates.

As to the rejection of claims 8 and 10 - 15 under 35 USC 103(a) as being unpatentable over Lam et al (US 6,825,920), and the rejection of claims 9 and 16 - 21 under 35 USC 103(a) as being unpatentable over Lam et al (US 6,825,920) in view of admitted prior art (Fig. 13, 14 and pages 1 - 11) and Kaji et al (US 6,716,300); such rejections are traversed insofar as they are applicable to the present claims, and reconsideration and withdrawal of the rejections are respectfully requested.

As to the requirements to support a rejection under 35 USC 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under '103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill

in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge". The court pointed out:

> The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Turning to independent claims 9 and 10, as amended, and the drawings of this application, such claims have been amended to recite an arithmetic unit for converting the multi-channel signal into at least one output signal and performing an

arithmetic operation on the at least one output signal. More particularly, the claims now more particularly, recite the features of the steps carried out by the arithmetic unit including Step (A) of finding differences between the output signals of respective substrates of one batch and the output signals of corresponding respective substrates of a proceeding batch. Referring to Fig. 5 of the drawings of this application as shown therein, a first lot or batch consists of a first 25 substrates considered to be respectively numbered 1 - 25, wherein each dot in Fig. 5 is representative of an output signal of a respective substrate. As shown in Fig. 5, data for four (4) lots or batches are provided, wherein each batch is represented by 25 substrates, with the second batch being represented by substrates 26 - 50. In accordance with the present invention, as described in connection with Formula 4 at page 27 of the specification, a difference is determined between the output signal of the substrate 26 of the second batch and the output signal of substrate 1 of the first batch or preceding batch, and corresponding differences are obtained for the respective objects of one batch and the preceding batch in the manner set forth. Applicants note that Fig. 6 shows a behavior of the difference signals for the respective substrates and between batches and lots. In accordance with the present invention and as recited in the claims, the steps also include Step (B) of determining an average value of the differences obtained Step (A), as represented by Fig. 7(a); Step (C) of determining a difference between a maximum and a minimum of the differences obtained in Step (A), as represented by Fig. 7(b); and Step (D) of obtaining a standard deviation of the differences obtained in Step (A), as represented by Fig. 7(c), for example. Applicants note that the arithmetic unit is represented by arithmetic unit 23 and carries out the steps, as described in the specification of this application. Furthermore, in accordance with the present

invention, and as now recited in the independent claims, the determination unit, as represented by determination unit 25 in Fig. 1 of the drawings of this application carries out other steps, such as comparing the various results as obtained in Fig. 7(a) - 7(c) with predetermined thresholds. More particularly, as shown in Fig. 7(a), there is now recited steps (a) of comparing the average value of the differences obtained in Steps (B) with a preset threshold, such as the threshold 40, Step (b) of comparing the difference between the maximum and minimum of the differences obtained in Step (C) with a preset threshold, as represented by the threshold 42 in Fig. 7(b); and Step (c) of comparing the standard deviation of the differences obtained in Step (D) with the preset threshold, as represented by the threshold 44 in Fig. 7(c). As described in the specification of this application, based upon such outputs, a determination is made of the condition in the process chamber. Applicants note that independent claims 8 and 9 have been amended to recite such features as described in the specification of this application, and applicants submit that contrary to the position set forth by the Examiner, Lam et al does not disclose or teach the recited features of the independent and dependent claims of this application.

Turning to Lam et al, a basic difference in structure and operation from that of the present invention is related to the difference signal which is obtained. More particularly, referring to Fig. 13 of Lam et al, and the corresponding description at columns 10 and 11 of Lam et al, wherein a first substrate is loaded and in steps 710 to 730 and output signal related to light emission is obtained with this first substrate being unloaded in step 740. Thereafter, in step 750, an Nth substrate is loaded into the plasma processing system and as described at column 10, lines 60 to 63, the Nth substrate represents the next substrate in order, i.e., the second, third, fourth ...

Nth. In steps 760 and 770, an output signal related to light emission for such substrate is obtained with the substrate being unloaded in step 780 and in step 790 as described in column 11, lines 1 - 6, a difference signal is obtained between the current substrate and a preceding substrate. Thus, it is apparent that a comparison is made between substrates of the same batch or lot, a difference therebetween obtained. There is no disclosure or teaching in Lam et al of batch processing wherein, as recited in independent claims 8 and 9, Step (A) determines a difference between respective substrates of one batch and the output signals of corresponding respective substrates of a preceding batch. Applicants submit that Lam et al fails to disclose or teach the aforementioned recited feature in the sense of 35 USC 103 and all claims patentably distinguish over Lam et al in this feature alone.

As is apparent from Fig. 13 of Lam et al and corresponding disclosure, based solely on this difference signal, a determination whether the plasma processing system is seasoned, is obtained. Thus, it is readily apparent that Lam et al in connection with Fig. 13, in addition to failing to disclose obtaining a difference in the manner set forth in Step (A), also fails to disclose obtaining an average value, maximum and minimum, and standard deviation of the difference obtained in Step (A). While the Examiner contends that standard deviations and various normalized signals may be obtained in accordance with the Lam et al, it is readily apparent that Lam et al fails to provide the recited features of the steps which are set forth in a step plus function format as sanctioned by 35 USC 112, sixth paragraph. Applicants submit that these recites features cannot be ignored nor are these recited features disclosed or taught by Lam et al in the sense of 35 USC 103. Thus, applicants submit that while Lam et al may provide a comparison of results with threshold values, there is also no disclosure or teaching of the steps of comparing the average

value means, the difference of maximum and minimum and the standard deviation with a plurality of preset thresholds, and operating in the manner set forth. As such, applicants submit that the independent and dependent claims of this application patentably distinguish over Lam et al in the sense of 35 USC 103 and should be considered allowable thereover.

Applicants note that as set forth in the dependent claims, and as described and illustrated in Figs. 5 - 9 of the drawings of this application, not only may signals of first principle components be utilized, but also second and third principle components may be utilized, as recited in the dependent claims of this application.

With regard to the combination of Lam et al with admitted prior art and Kaji et al, applicants submit that the additional cited art fail to overcome the differences of Lam et al, as pointed out above. Thus, the independent claims 8 and 9 and the dependent claims also patentably distinguish over the proposed combination in the sense of 35 USC 103.

For the foregoing reasons, applicants submit that all claims present in this application patently distinguish over Lam et al in the sense of 35 USC 103 all claims should be considered allowable thereover. Accordingly, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli,

Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 648.42568VX1), and please credit any excess fees to such deposit account.

Respectfully submitted,

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